

**ARLINGTON-JACKSON WEST SITE  
PHASE II INVESTIGATION WORK PLAN  
(PARCELS 1-19)  
SAINT PAUL, MINNESOTA**

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*Prepared for:*

**SAINT PAUL PORT AUTHORITY  
1900 LANDMARK TOWERS  
345 ST. PETER STREET  
SAINT PAUL, MINNESOTA**

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**June 2007**

*Prepared by:*

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PHASE II INVESTIGATION WORK PLAN  
FOR PARCELS 1-19  
SAINT PAUL, MINNESOTA**

**Prepared for:**

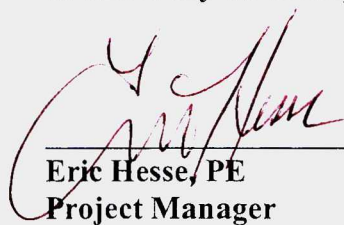
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**This report was prepared by me  
or under my direct supervision.**

  
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## 1.0 INTRODUCTION

### 1.1 PURPOSE AND SCOPE

Liesch Associates, Inc. (Liesch) was retained by the Saint Paul Port Authority (SPPA) to conduct a Phase II Investigation at the Arlington-Jackson West site south of Arlington Avenue and east of Jackson Street in Saint Paul, Minnesota (the Property). Specifically, the Property consists of Parcels 1-19 and is a total of approximately 52.5 acres. Refer to **Figure 1** in **Appendix A** illustrating the location of the Property. **Figure 2** in **Appendix A** illustrates the Property layout. Refer to **Figure 3** in **Appendix A** illustrating the proposed development layout.

The purpose of this Phase II Investigation is to supplement previously gathered environmental data, assess suspect areas at the Property and evaluate potential response actions. The design of this investigation was based on Liesch's review of the following reports:

1. Remedial Investigation Report; Super America Station No. 4351; 1200 Jackson Street; St. Paul, Minnesota; prepared by Delta Environmental Consultants, Inc. for Super America; dated January 1991.
2. Letter entitled, Test Pit Photoionization Readings; Super America Station No. 4351; St. Paul, Minnesota; MPCA Leak #336; prepared by Delta Environmental Consultants, Inc. for Super America; dated July 8, 1992.
3. Phase I Environmental Site Assessment for Arlington-Jackson Site; Southeast of Arlington Avenue and Jackson Avenue; Saint Paul, Minnesota; prepared by American Engineering Testing for the Saint Paul Port Authority; dated April 1994 (AET Phase I).
4. Arlington-Jackson Phase II – A Work Plan; Arlington-Jackson Site; Saint Paul, Minnesota; prepared by American Engineering Testing for the Saint Paul Port Authority; dated September 19, 1994 (Phase II Work Plan).
5. Phase II Subsurface Exploration Report; Arlington-Jackson Site; Saint Paul, Minnesota; prepared by American Engineering Testing for the Saint Paul Port Authority; dated December 14, 1994 (Phase II Investigation).
6. Phase II Investigation Report, AJ Auto Parts, prepared by American Engineering Testing for the Saint Paul Port Authority, dated September 28, 1995.

7. Remedial Investigation Report (Leak #11932); prepared by Cirrus Environmental Group, Inc. for Advance Shoring Equipment Company, 1400 Jackson Street; St. Paul, Minnesota; dated July 8, 1999.
8. Environmental Soil Investigation Performed for Insurance Auto Auctions, Inc.; Brac's Auto Parts; 1336 Jackson Street; St. Paul, Minnesota; prepared by Mostardi Platt Associates, Inc. dated June 21, 2001
9. Updated Phase One Environmental Site Assessment; Arlington-Jackson Site; Saint Paul, Minnesota; prepared by Liesch Associates, Inc. for the Saint Paul Port Authority; dated March 31, 2007 (Liesch Phase I).

This Phase II Investigation Work Plan (Work Plan) is submitted for MPCA and EPA review and approval prior to initiating the Phase II work. We expect to perform the Phase II work in July 2007.

## **1.2 SUMMARY OF PREVIOUS INVESTIGATION FINDINGS**

### **1.2.1 Historic Investigative Work**

The Property consists of a total of approximately 52.5 acres. Past subsurface investigative work has been completed on Parcels 1-12 at the Property.

Parcels 1-12 were investigated in the late fall and early winter of 1994. A total of 28 soil borings and 11 geoprobes were installed on Parcels 1-12 in accordance with the Phase II Work Plan. Refer to **Figures 4 and 4A** in **Appendix A** for locations of these previously installed borings and geoprobes. The soil borings were installed to evaluate soil conditions and the geoprobes were installed to evaluate groundwater conditions. Specific environmental concerns addressed in the investigation included underground storage tanks, septic drain fields, surface staining and past filling operations (buried demolition debris).

No subsurface investigative work has been completed on the Parcels 13-16, 18 or 19 of the Property. Parcel 17 was investigated as a former petroleum leak site (Leak #336).

The following is a summary of investigative work completed previously on a parcel by parcel basis.



#### **Parcels 1 through 4**

These parcels are currently owned by RLR, Inc. and consist of approximately 5 acres. These parcels have been under commercial use since the late 1960s, including auto and cycle parts sales and radiator service. One building and a paved parking area are currently present on Parcels 1 and 2; the building is a single story slab-on-grade concrete structure. The building houses the operations for the sale of used automobile parts. The building is connected to municipal water and sewer, and is heated with natural gas.

Floor drains are reportedly present in a maintenance shop on site and reportedly drain to a flammable waste trap prior to discharge to the sanitary sewer. Storage of petroleum products including gasoline, waste oil and used oil has historically taken place on these parcels. Other hazardous materials historically observed on these parcels include fluorescent tubes, antifreeze, lead acid batteries and degreasing solvents.

Four (4) soil borings, SB-13, SB-14, SB-14a and SB-15, were completed on these parcels. Each was completed to the approximate depth of groundwater. Soils encountered on this parcel were indicative of wetland conditions. Groundwater was encountered between 7 to 12 feet on these parcels.

Soil samples were collected from SB-13 (2-4'), SB-14 (4.5-6.5' and 7-9'), SB-14a (2-4' and 7-9') and SB15 (12-14'). Soil samples SB-13 (2-4'), SB-14 (4.5-6.5') and SB-14 (7-9') had detections of DRO of 4800 ppm, 250 ppm and 92 ppm, respectively. All other samples were below detectable levels for DRO. These samples were also analyzed for PCBs, RCRA metals and VOCs. No VOCs were detected above method detection limits and RCRA metals detections fell within the ranges of naturally occurring background levels. No PCBs were detected above method detection limits in any of the samples, however, method detection limits were elevated slightly due to matrix interferences.

Two geoprobes, GP-6 and GP-7, were completed on the eastern half of these parcels. It is presumed groundwater was collected at a depth of approximately 7-12 feet since this is the depth at which groundwater was reportedly encountered in the soil borings conducted on these parcels. A groundwater sample was collected from each probe and analyzed for DRO, GRO, RCRA metals and VOCs. The sample collected from GP-7 was also sampled for PCBs. DRO, GRO and PCBs were not detected above method detection limits in any of the samples. Low levels of lead, barium, and various petroleum-related VOCs were detected in the samples collected from each of the geoprobes.

### **Parcels 5 and 10**

These parcels are currently owned by Ordean A. Haug and Advance Shoring Company. Parcel 5 is primarily used for access to Parcel 10 from Jackson Street and consists of approximately 2.09 acres. Storage of equipment and supplies also takes place on this parcel. Parcel 10 is occupied by the Advance Shoring Company business and consists of approximately 9.44 acres. Advance Shoring Company is a construction shoring equipment manufacturer and supplier. Parcel 10 is occupied by a two story office building and two pole barns. The pole barns are primarily used for storage with a portion of the eastern pole barn also used for maintenance. No floor drains reportedly exist in the shop portion of the eastern pole barn. The remainder of Parcel 10 is used to store equipment which is rented or sold to contractors for construction projects.

These parcels and their facilities are serviced by City water. There are two septic drainfields on Parcel 10, one north of the office building and one near the east pole barn. Historically the structures were heated by heating oil stored in four underground heating oil tanks. In addition, a fifth underground storage tank was used to store used oil. All five USTs were removed from the site on September 29, 1998. Two above ground storage tanks are used to store diesel fuel. Hazardous materials reportedly used on site include spent lead acid batteries, fluorescent light bulbs, degreasing solvents and a xylene wash. Past investigation has identified the presence of buried debris (former demolition debris landfill).

Soil borings SB-25, 25a, 26, 27, 27a, M27, 28 – 30, and A1 – A4 were installed on Parcel 10. Soil boring SB-16 was installed on Parcel 5. Soils on these parcels consist mainly of medium to fine grained sands. An extensive area of fill materials consisting of wood, glass and gravel was encountered in the southern half of Parcel 10. A minor amount of fill consisting of bricks was encountered in boring SB-16 on Parcel 5.

Soil samples collected from SB-26 and SB-A1 through A4 indicated the presence of elevated levels of lead in soils at depths ranging from approximately 4.5 feet to likely greater than 16.5 feet below grade. Elevated levels of DRO were encountered in borings SB-26 and SB-25 in samples collected from 4.5-6.5' and 2-4', respectively. Analytical results also indicated trace amounts of PAHs in SB-M25.

Elevated levels of methane were encountered during the installation of boring SB-25 (gas meter readings of 100% of the LEL).

Perched groundwater was encountered in some borings at approximately 5 feet below grade.



The five underground storage tanks originally installed on Parcel 10 were removed on September 29, 1998. The tanks consisted of the following:

- |           |              |             |
|-----------|--------------|-------------|
| • Tank #1 | 1000 gallons | Heating Oil |
| • Tank #2 | 1500 gallons | Used Oil    |
| • Tank #3 | 1000 gallons | Heating Oil |
| • Tank #4 | 1000 gallons | Heating Oil |
| • Tank #4 | 1000 gallons | Heating Oil |

During the removal of these USTs, contamination was discovered in the excavations of Tanks #1, Tank #3 and Tank #5 based on the results of bottom samples collected upon removal of these tanks. The leaks were reported and assigned MPCA Leak #11932. A remedial investigation was completed by Cirrus Environmental Group, Inc. including the installation of 13 geoprobes (TB-1 through TB-13) in the vicinity of all five tank basins. Refer to **Figure 4A** in **Appendix A** illustrating the location of the tanks and geoprobes.

Results of this remedial investigation identified petroleum contaminated soils in the immediate vicinity of Tanks #1 and #3. No geoprobes were completed in the vicinity of Tank #5 during this remedial investigation. Contamination in the basin of Tank #1 ranged from approximately 8-20 feet below grade and contamination in the basin of Tank #3 ranged from approximately 4-20 feet below grade.

### **Parcels 6, 7, and 8**

Parcel 6 is currently owned by Vinai Office Park Corporation and consists of 2.54 acres. Structures on site consist of a three story structure and another smaller structure occupied by small office users. The facilities are connected to municipal sewer, water and are serviced by natural gas. A portion of the parcel previously wooded with a mature stand of trees has been clear cut in preparation for the construction of an area for a flea market.

Parcel 7 is currently owned by CFE Properties LLC and consists of 2 acres. Parcel 7 is occupied by one house/office structure. The parcel has been used for the storage and sale of salvaged building and housing materials ranging from plumbing fixtures, wooden fixtures (doors, windows, screens, etc.) and other salvageable building materials. The materials are stored in the yard of this parcel.

A fuel oil underground storage tank (for heating purposes) is present under the front steps of the house/office structure. The building was converted to natural gas after it was purchased in the

1960s. The site is serviced by municipal sewer and water. Past investigation has identified buried debris as part of a former demolition debris dump.

Parcel 8 is currently owned by Richard and Jean Pellow and consists of 2.22 acres. Parcel 8 is occupied by two large pole barn structures. Along with Parcel 7, Parcel 8 has been used for the storage and sale of salvaged building and housing materials ranging from plumbing fixtures, wooden fixtures (doors, windows, screens, etc.) and other salvageable building materials. The materials are stored in the yard of this parcel and the two large pole barn structures. The site is serviced by City sewer and water. Past investigation has identified buried debris as part of a former demolition debris dump.

Soil borings SB-17 through SB-20 were installed on Parcels 6, 7, and 8. The upper ten feet of soils on these parcels consisted primarily of fill material underlain by medium to fine sands to 20 feet. Materials below 20 feet consist of clay with sandy clay lenses. Fill material encountered in SB-19 consisted of demolition debris which consisted of wood, shingles, bituminous and coal.

Fill consisting of cinder, concrete, brick, wood and glass was encountered from the surface of boring SB-19 to 19 feet below grade surface. Water was encountered at a depth of approximately 15.5 feet. Elevated levels of DRO and metals were encountered at depth in SB-19. PID readings throughout the depth of SB-19 indicated contamination throughout the depth of the boring.

Geoprobos GP-8 through GP-10 were proposed to be installed on Parcels 6, 7 and 8. Geoprobe GP-8 was installed on Parcel 6 and GP-9 on Parcel 8. However, GP-10 was apparently not completed due to difficult drilling, presumably due to the presence of waste materials. Groundwater samples were collected from both geoprobos and analyzed for DRO, GRO, PCBs and metals. No contaminants were detected above method detection limits with the exception of low level detections of Barium and Lead. The sample collected from GP-8 was also analyzed for VOCs. Low level detections of several petroleum related VOCs were identified in this sample.

### **Parcel 9**

This parcel is owned by the City of Saint Paul and is a water utility easement and consists of approximately 1.09 acres. Currently there are no known utilities within this easement. No borings or geoprobos were installed on this parcel as part of previous investigations.



### **Parcels 11 and 12**

These parcels are owned by Robert L. Brackey and consist of approximately 9.5 acres (5.66 for Parcel 11 and 3.84 for Parcel 12). These parcels have been associated with auto salvage and parts sale since the mid-1970s. Previous investigations have indicated evidence that a number of areas on these parcels have been filled with construction debris. Other hazardous materials of concern are solvent and petroleum products associated with automobile salvage activities. Several areas of petroleum impacts were identified during the investigation and cleanup of MPCA Leak #14315.

Soil borings SB-21 through SB-24, SB-31 and SB-32a were installed on these parcels. Soil samples were collected from each boring at selected sampling depths and analyzed for the presence of DRO, GRO, PAHs, VOCs, PCBs and RCRA metals. Results of soil sampling indicated DRO contamination in samples collected from borings SB-23, SB-24 and SB-31 at depths of 12-13.5', 9.5-11.5' and 14.5-16.5', respectively. Reportedly, this DRO contamination appears to be associated with the debris/fill materials. An elevated lead concentration (510 ppm) was detected in the sample collected from SB-23 (9.5-11').

Geoprobes GP-11 and GP-12 were installed on Parcel 11. A groundwater sample was collected from GP-11 and analyzed for DRO, GRO, PCBs, RCRA metals and VOCs. No detections of DRO, GRO, PCBs or RCRA metals were identified above method detection limits. Methylene Chloride, Toluene and Acetone were detected at low levels in the sample analyzed for VOCs. However, Methylene Chloride and Acetone were also detected in the laboratory method blank.

As part of the investigation of MPCA Leak #14315, seven (7) geoprobe borings were installed in areas of above-ground storage tanks, current and former locations of a car compactor, floor drains, waste oil burner, oil/water separator and antifreeze storage. This investigative work resulted in the removal of 88 cubic yards from the area of ASTs containing diesel fuel, 62 cubic yards from the area of ASTs containing gasoline and 200 cubic yards from the areas of the current and former car compactors. Low level petroleum-related VOCs were detected in the vicinity of the oil/water separator. No detections of significance were reportedly encountered in the other geoprobe borings installed.

### **Parcel 13**

This parcel is owned by Richard M. Pellow and consists of approximately 10.5 acres. Two structures are located on this parcel. One structure is an office building constructed in approximately 1973. The second structure is a pole barn in the northeast portion of the parcel.



The remaining area is used as storage for vehicles prior to auction. No borings or geoprobes were installed on this parcel as part of previous investigations.

#### **Parcel 14**

This parcel is owned by Insurance Auto Auctions, Inc. and consists of approximately 1.17 acres. No borings or geoprobes were installed on this parcel as part of previous investigations.

#### **Parcel 15**

This parcel is owned by the City of Saint Paul and is a water utility easement and consists of approximately 1.09 acres. Currently there are no known utilities within this easement. This parcel is vacant land which includes abandoned former railroad beds. No borings or geoprobes were installed on this parcel as part of previous investigations.

#### **Parcels 16 and 17**

These parcels are owned by Quentin G. Minkin and consist of a total of 1.28 acres. Currently, one structure is located on Parcel 16 and one structure is located on Parcel 17. Both structures appear to be office facilities associated with the operation of used automobile sales. Both parcels are paved parking areas associated with the used automobile sales operation. No borings or geoprobes were installed on Parcel 16 as part of previous investigations.

Parcel 17 was previously a Super America convenience store with an historical underground storage tank leak (Leak #366). Liesch reviewed the MPCA file for the leak identified on Parcel 17. Free product was encountered in perched ground water near one of the UST basins during a subsurface investigation of the site. Three tanks were excavated from the site on April 19, 1990 and 310 tons of impacted soils were excavated and transported to a facility for thermal treatment. Treatment of the impacted soil was completed on September 5, 1990. The Remedial Investigation completed for the site indicates that low PID readings (3-14 ppm) were detected in upper 15 feet of the soil remaining in place near the former UST basins. The MPCA issued a site closure letter for this leak site on May 17, 1991; a No Corrective Action Required letter was issued to SuperAmerica on September 1, 1992.

#### **Parcels 18 and 19**

These parcels are currently owned by the City and consist of approximately 4.29 acres. The parcels are currently vacant land and include the former road bed of old Maryland Avenue. No borings or geoprobes were installed on these parcels as part of previous investigations.

Refer to **Figure 5** in **Appendix A** illustrating the extent of debris and soil contamination based on the data provided from previous investigations.

### **1.2.2 2007 Site Reconnaissance**

Liesch representative Jennifer McLean conducted a walking survey of the Property from the property boundaries on March 14, 2007 because access to the Property was unavailable. Ms. McLean was not accompanied by a site representative. The purpose of the walk-over survey was to identify any readily apparent indications of environmental concern on or immediately adjacent to the Property. Access to the Property for purposes of site reconnaissance has not been available since 1993.

Prior to completing the investigation proposed under this Work Plan, Liesch will perform a detailed walk-over of the entire Property to be investigated. During this walk-over, Liesch will confirm past observations and document any new observations that ultimately effect final test locations. Prior to completing the investigation proposed under this Work Plan, Liesch will submit a supplement to this Work Plan to the MPCA indicating any additional test locations and/or relocation of test locations, if necessary.

### **1.3 RESPONSE ACTION PLANNING**

It is anticipated that a Response Action Plan/Construction Contingency Plan (RAP/CCP) will be developed for the Property following completion of the investigative work proposed in this Work Plan. Liesch anticipates comparing analytical results of the investigation to MPCA established Tier II Industrial Soil Reference Values (ISRV) to develop appropriate soil cleanup goals for the identified contaminants of concern. We also anticipate attempting to establish a correlation between PID field results and DRO/GRO analytical results to assist with the development of a DRO/GRO cleanup goal. Analysis of groundwater samples will be completed to compare current levels of contamination to Minnesota Department of Health (MDH) Health Risk Limits (HRLs).

This investigation will further defining the extent (vertical and horizontal) of the waste and the physical and chemical characteristics of the waste mass in an effort to help develop the RAP/CCP.

The Work Plan has been prepared with the objective of obtaining the following liability assurances from the MPCA.

- A "No Association Determination" for the entire Site for the SPPA.



- A "Certificate of Completion" for the Property. It is anticipated that the final assurance will include the necessary institutional controls.
- Closure letter for petroleum releases identified at the Property.

## **2.0 PHASE II INVESTIGATION WORK**

### **2.1 INVESTIGATION STRATEGY**

#### **2.1.1 Soil Investigation**

As indicated above, previous investigative work identified several areas of suspect environmental conditions that warrant further Phase II subsurface investigation on the Property. The location of the suspect areas and the proposed locations of geoprobes, hand augers and test pits are illustrated on **Figure 5 in Appendix A**.

Areas of concern and documented contamination identified during previous investigations on the Property and a summary of the investigative work proposed in this Work Plan are discussed below:

- 34 test pits are proposed to be conducted within and around the waste mass identified at the Property to date to investigate the physical and chemical characteristics associated with buried debris associated with the contractor dump site. Test pits have also been proposed in areas previously uninvestigated. This will allow a more comprehensive review of subsurface conditions in these locations.
- 30 soil borings are proposed to be installed at the Property. Some of these borings will be installed within the area of the documented waste mass to investigate the thickness of the waste mass along with physical and chemical characteristics. Several borings will also be located in areas of potential contamination identified during past and recent site reconnaissance including surface staining, septic drainfields, floor drains, etc. Soil borings been located in areas of proposed building pads to document whether contamination exists in these areas.
- 6 hand auger borings are proposed to be conducted within 2 buildings to assess impacts from previous operations within the building. It is understood that these buildings have been used as maintenance shops and/or have floor drains that suggest the need for investigation.
- 63 geoprobes are proposed to be installed at the Property. A majority of these geoprobes will be installed in and around the waste mass to determine levels of subsurface VOC and methane vapors. Additional probes will be installed to investigate areas of contamination

identified in previous investigations conducted on the most northern and southern portions of the Property.

The following nomenclature will be used to identify the borings, test pits, hand augers and geoprobes proposed under this Work Plan:

Borings	SB-35
Test Pits	TP-1
Geoprobes	GP-1 (soil)
Geoprobes	VP-1 (soil vapor)
Hand Augers	HA-1

Therefore, GP-1 is identified as Liesch Geoprobe Number 1.

The following is a discussion of the reasoning behind investigation locations on a parcel by parcel basis.

#### **Parcels 1 through 4**

Twelve (12) geoprobes are proposed to be installed on these parcels to supplement data from previously conducted investigations. Nine (9) of these geoprobes will be installed to further define impacts in the vicinity of SB-13, SB-14 and the location of a former UST basin. Three (3) additional geoprobes will be installed along the southern and southwestern boundaries of this group of parcels to investigate the potential of subsurface vapors emanating from the buried waste deposit identified to the south. Three (3) hand augers have been proposed to be completed within the maintenance shop area where floor drains and oil/water separator reportedly exist.

Refer to **Section 2.3** for a discussion of methods used for geoprobe installation and sampling procedures. Refer to **Table 1** in **Appendix B** for analytical testing to be performed.

#### **Parcels 5 and 10**

Three (3) test pits and one (1) geoprobe have been proposed to be installed on Parcel 5. Little has been conducted in the way of investigation on this parcel. Only one boring (SB-16) was installed on the far eastern portion of this parcel during past investigations. The test pits proposed are intended to determine the potential presence of contamination beneath the proposed building pad area. The geoprobe is intended to determine the potential presence of subsurface vapors emanating from the buried waste deposit identified during previous investigations.

Parcel 10 is one of the largest parcels on the Property. Several issues have been identified on this parcel during past investigations including buried debris, underground storage tank leaks,

subsurface lead contamination and elevated subsurface methane levels. Five (5) test pits, six (6) soil borings, ten (10) geoprobes and three (3) hand augers have been proposed on this parcel to supplement existing data from previous investigations. The test pits are proposed to further define the extent of buried debris identified during previous investigations. Soil borings have been placed in building pad areas and will be observed for environmental conditions in building pad areas during installation. Soil samples will be collected for laboratory analysis should signs of contamination be observed. Geoprobes have been proposed to be placed near the edge of the buried debris identified during previous investigations and near proposed building pad areas in order to assess the presence of subsurface vapors in these areas. Hand augers have been proposed to be installed inside the maintenance building to assist with determining the presence of any subslab contamination due to operations within the maintenance building or from previous underground storage tank leaks.

Refer to **Section 2.3** for a discussion of methods used for boring, geoprobe and test pit installation and sampling procedures. Refer to **Table 1** in **Appendix B** for analytical testing to be performed.

#### **Parcels 6, 7, and 8**

Two (2) test pits have been proposed to be installed along the eastern portions of Parcels 7 and 8 to help further define the extent of buried debris identified during previous investigations. One test pit is proposed in the vicinity of SB-19 where significant DRO impacts were identified during previous investigations. Two (2) soil borings have been proposed in building pad areas and will be observed for environmental conditions during installation. One of the borings will be used to investigate the reported existence of a former fuel oil tank beneath the front porch of the office building. Seven (7) geoprobes have been proposed to be placed near the edge of the buried debris identified during previous investigations and near proposed building pad areas in order to assess the presence of subsurface vapors in these areas.

Refer to **Section 2.3** for a discussion of methods used for boring, geoprobe and test pit installation and sampling procedures. Refer to **Table 1** in **Appendix B** for analytical testing to be performed.



### **Parcel 9**

One (1) test pit and one (1) soil boring have been proposed to be installed on this parcel to further define buried debris types and thickness identified during previous investigations. Refer to **Section 2.3** for a discussion of methods used for boring and test pit installation and sampling procedures. Refer to **Table 1** in **Appendix B** for analytical testing to be performed.

### **Parcels 11 and 12**

Parcels 11 and 12 are also two of the largest parcels on the Property. Some investigation of these parcels has taken place in the past. The test pits, soil borings, geoprobes and hand augers have been proposed to supplement the information from previous investigations as well as continue to search for potential subsurface contamination. Ten (10) test pits have been randomly placed over these parcels to determine the presence of buried debris and impacts due to past site activities. Some of these test pits have been placed in areas of the car compacting operations and the gasoline AST location. Five (5) soil borings have been proposed in the proposed building pad areas and will be observed for environmental conditions during installation. Two of the borings have been placed in areas of potential subsurface contamination based on the reported presence of above-ground storage tanks and storage of antifreeze and other maintenance materials. Nine (9) geoprobes have been proposed to be placed near edge of the buried debris identified during previous investigations and near proposed building pad areas in order to assess the presence of subsurface vapors in these areas. Three hand augers have been proposed to be installed inside the maintenance building on Parcel 11 to assist with determining the presence of any subslab contamination due to a reported flammable waste trap, floor drains and a waste oil burner.

Refer to **Section 2.3** for a discussion of methods used for boring, geoprobe, test pit and hand auger installation and sampling procedures. Refer to **Table 1** in **Appendix B** for analytical testing to be performed.

### **Parcel 13**

Parcel 13 is also one of the largest parcels on the Property. No previous investigation has been conducted on this parcel that Liesch is aware of. Seven (7) test pits have been randomly placed over this parcel to determine the presence of buried debris and impacts due to past site activities. Eleven (11) soil borings have been proposed and will be observed for environmental conditions during installation. Five (5) geoprobes have been proposed to be placed near edge of the buried debris identified during previous investigations and near proposed building pad areas in order to assess the presence of subsurface vapors in these areas.

Refer to **Section 2.3** for a discussion of methods used for boring, geoprobe and test pit installation and sampling procedures. Refer to **Table 1** in **Appendix B** for analytical testing to be performed.

#### **Parcel 14**

No previous environmental investigation has been conducted on this parcel that Liesch is aware of. It has primarily been used as access to Parcel 13. One (1) geoprobe has been proposed to assess the potential presence of subsurface vapors associated with potential buried debris on this parcel. Refer to **Section 2.3** for a discussion of methods used for geoprobe installation and sampling procedures. Refer to **Table 1** in **Appendix B** for analytical testing to be performed.

#### **Parcel 15**

No previous environmental investigation has been conducted on this parcel that Liesch is aware of. Four (4) geoprobes have been proposed to assess the potential presence of subsurface contamination on this parcel. Refer to **Section 2.3** for a discussion of methods used for geoprobe installation and sampling procedures. Refer to **Table 1** in **Appendix B** for analytical testing to be performed.

#### **Parcels 16 and 17**

Thirteen (13) geoprobes have been proposed to assess the potential presence of subsurface contamination and to supplement areas of previous contamination associated with former underground storage tank leaks. Refer to **Section 2.3** for a discussion of methods used for geoprobe installation and sampling procedures. Refer to **Table 1** in **Appendix B** for analytical testing to be performed.

#### **Parcels 18 and 19**

No previous environmental investigation has been conducted on this parcel that Liesch is aware of. Six (6) test pits and three (3) geoprobes have been proposed to be installed on these parcels. The test pits have been proposed to assess the potential presence of subsurface contamination on these parcels. The geoprobes have been installed to determine the potential presence of subsurface vapors emanating from buried debris previously identified in past investigations. Refer to **Section 2.3** for a discussion of methods used for geoprobe installation and sampling procedures. Refer to **Table 1** in **Appendix B** for analytical testing to be performed.

### **2.1.2 Groundwater Investigation**

Past investigations have indicated the presence of contamination within the water table (approximately 20-25 feet below ground surface). Twelve (12) monitoring wells (MW-1 through MW-12) are proposed to be installed on the Property. These monitoring wells have been



placed to define the extent and magnitude of groundwater contamination previously identified at the Property. Results will be compared to Minnesota Department of Health (MDH) Health Risk Limits (HRLs). Refer to **Figure 6** in **Appendix A** for proposed locations of these monitoring wells.

### **2.1.3 Building Demolition Survey**

A pre-demolition survey will be completed to address pre-demolition abatement requirements associated with asbestos containing materials (ACM), lead based paint materials and other hazardous materials (florescent light bulbs, ballasts, mercury switches, etc.). These surveys will be conducted in accordance with MPCA and MDH requirements. A final report will be prepared identifying materials identified during the surveys.

## **2.2 QUALITY CONTROL**

A Quality Assurance Project Plan (QAPP) was prepared by Liesch on behalf of the SPPA as required by the U. S. Environmental Protection Agency (EPA) Brownfield Redevelopment Pilot Program for the Westminster Junction (Phase 1) Site. This QAPP was approved by the USEPA on February 26, 2003. An amendment to this QAPP was submitted to the EPA for review on July 27, 2005. This amendment incorporated QA/QC procedures and Standard Operating Procedures (SOPs) for the sampling and abatement of ACM. Additional amendments were submitted to and approved by the EPA dated July 27, 2005, September 12, 2005 and February 27, 2006. This QAPP and these amendments will be implemented during the investigation of this Property.

Liesch is currently updating the overall QAPP for the SPPA. The purpose of this update is to incorporate any new EPA requirements, consolidate the previous amendments into one document and to provide an overall QAPP that the SPPA can implement at this site and any future sites the SPPA investigates. If this update to the QAPP is approved prior to conducting this proposed investigation, it will be implemented in place of the existing QAPP and amendments.

## **2.3 INVESTIGATION METHODS**

The primary method of investigation for soils and groundwater will be either geoprobe, hollow stem auger boring and/or test pit technology. Hollow stem auger methods will be implemented for the installation of monitoring wells. Published regulatory methods will be implemented to complete the pre-demolition survey portions of this Work Plan. The proposed locations of the geoprobes, borings, test pits and monitoring wells are shown on **Figure 6** in **Appendix A**.



### **2.3.1 Geoprobes**

Push-probes will be completed using a Geoprobe™ rig to allow collection of soil samples and subsurface vapor samples, where designated, at the Property. Continuous soil samples (intervals of 2 feet) will be collected from the push-probes when sampling for soil contamination using a polyethylene-lined four-foot open-tube macro-core sampler.

At least 2 soil samples from each Geoprobe™ hole will be collected for laboratory analysis. Additional soil samples may be analyzed if field screening indicates the presence of possible contamination. Soil samples will be placed in laboratory-provided containers and immediately placed in an ice-chilled cooler for transportation to an independent laboratory. One subsurface vapor sample will be collected from each geoprobe installed for the purposes of assessing levels of subsurface vapors. Samples will be collected using Suma canisters.

### **2.3.2 Soil Borings**

Borings will be installed using hollow stem auger (HSA) drilling methods. Split spoon samples will be collected continuously during advancement of the auger flight. Soil samples will be screened in the field by a Liesch Geologist using a photoionization detector (PID) equipped with a 10.6 electron volt (eV) lamp. At least two samples will be collected for laboratory analysis from each of the borings. These soil samples will be packaged in laboratory supplied containers for laboratory analysis should contamination be identified during the screening process. Liesch will log all soil borings and note items, including soil types encountered, debris encountered, and obvious signs of contamination (odor, staining, etc.).

### **2.3.3 Test Pits**

Test pits will be excavated to observe subsurface conditions and for the collection of soil samples. Test pits will be logged on Liesch's standard test pit log form, which will include soil types encountered, debris encountered, and obvious signs of contamination (odor, staining, etc.). Soil samples will be screened in the field by a Liesch Geologist using a photo-ionization detector (PID) equipped with a 10.6 electron volt (eV) lamp.

At least two soil samples from each test pit will be collected for laboratory analysis. Additional soil samples may be analyzed if field screening indicates the presence of possible contamination. Soil samples will be placed in laboratory-provided containers and immediately placed in an ice-chilled cooler for transportation to an independent laboratory.

### **2.3.4 Well Sampling**

The 12 monitoring wells will be installed using hollow stem auger (HSA) drilling methods. Split spoon samples will be collected continuously during advancement of the auger flight. Soil samples will be screened in the field by a Liesch Geologist using a photoionization detector (PID) equipped with a 10.6 electron volt (eV) lamp. Select soil samples will be packaged in laboratory supplied containers for laboratory analysis should contamination be identified during the screening process.

The boreholes will be logged on Liesch's standard boring log form, and Liesch will note items, including soil types encountered, debris encountered, and obvious signs of contamination (odor, staining, etc.).

Upon completion of the soil boring to a point 7 feet below the identified surface of the water table a 4" PVC monitoring well utilizing a 10-foot, 10-slot screen will be installed in the borehole. A formation prescribed filter pack will be placed to a point 2-foot above the screen. A bentonite plug will be placed, followed by neat cement grout to the ground surface.

The wells will be developed, purged and sampled. Groundwater samples will be placed in laboratory-provided containers and immediately placed in an ice-chilled cooler for transportation to an independent laboratory for analysis of the parameters identified in **Table 1 in Appendix B**.

### **2.3.5 Pre-Demolition Sampling and Investigation**

As part of this Phase II Work Plan, Liesch will conduct an asbestos, lead-based paint and regulated materials/wastes building survey and prepare a written report summarizing the findings of their work. The survey will identify and sample readily identifiable suspect materials containing asbestos or lead, and will identify other materials/wastes that are regulated that require special handling, where the materials are located, their condition and quantity.

It is anticipated that structures will be occupied therefore the survey will be a non-destructive survey. The survey will allow for an accurate estimate of abatement costs needed for RAP planning and implementation. Any need for additional sampling will be identified in the RAP.

All identification and sampling of materials will be conducted in accordance with Environmental Protection Agency (EPA) Asbestos Hazard Emergency Response Act (AHERA) 40 CFR Part 763, Subpart E as indicated in Minnesota Department of Health (MDH) and OSHA rules and regulations. A laboratory with an approved National Voluntary Laboratory Accreditation Program (NVLAP) license on file with the MDH shall complete the asbestos portion of the



analytical work. The samples will be examined using polarized light microscopy (PLM) techniques. Lead-paint analysis will be conducted using a Niton XL-700 series multi-element spectrum analyzer. The Niton XL-700 is a field portable X-Ray Fluorescence (XRF) spectrum analyzer capable of identifying lead concentrations in paint and other materials.

State and federal regulations require these surveys be completed prior to building demolition, renovation or remodeling.

#### **2.3.6 Analytical**

Based on information provided in previous reports and the results of previous soil/groundwater investigations conducted on the Property, contaminants of concern at the Property potentially include Diesel Range Organics (DRO), Semi-volatile organic compounds and heavy metals are the main contaminants of concern. Gasoline Range Organics (GRO), Volatile Organic Hydrocarbons (VOC) and Polychlorinated Biphenols (PCBs) will be sampled at select test locations as well. **Tables 2 and 3 in Appendix B** provide information on laboratory analytical methods to be implemented for soil and water analysis along with guidelines on sample bottle types, sample volumes, preservative requirements and holding time limitations for each of the analytical methods being run in the laboratory. **Table 4 in Appendix B** lists the Field Quality Control samples that will be collected during this investigation. ACM will be analyzed by using Polarized Light Microscopy per MDH requirements.

#### **2.3.7 Utility Clearance**

Once boring/test trench locations are established, a public and private utility locate will be coordinated and completed. The public locate will identify those public utilities and service connections presently active at the Site. Liesch will also retain a private utility location company to approve all of the boring locations to confirm that there are no private utilities present in the boring/test trench locations.

#### **2.3.8 Investigation Derived Wastes**

The only investigation-derived waste that will be disposed of off-site will be disposable sampling and personal protection equipment. Any remaining cuttings from geoprobing and drilling procedures will be used to backfill the borehole and/or thin spread at the individual boring location. Test trench materials excavated to expose subsurface materials will be placed back in the test trench once sampling is completed. If debris with suspect asbestos containing material is identified, it will be placed back in the test trench unless large discrete asbestos containing pieces can be segregated. If large pieces are encountered, they will be placed on poly and wrapped and retained at the test trench site for subsequent management during the remedial action.

### **2.3.9 Survey Control**

A private surveying company will be hired to establish survey control during the investigation.

## **3.0 REPORTING**

Upon completion of the investigation, a final report will be prepared summarizing the work completed in accordance with the approved Work Plan.

The report will include a discussion along with associated graphics to document and illustrate whether adequate site characterization has been completed. If there are locations that warrant further assessment or may require subsequent confirmation sampling, those areas will be identified and recommendations will be made as to whether supplemental work should be completed prior to, or during response action activities. A Response Action Plan/Construction Contingency Plan (RAP/CCP) will be prepared to outline remedial activities for final redevelopment of the Property and to obtain the above-requested assurances from the MPCA. If necessary, this RAP/CCP will incorporate any additional investigation work to further refine identified areas of contamination.

## **4.0 SCHEDULE**

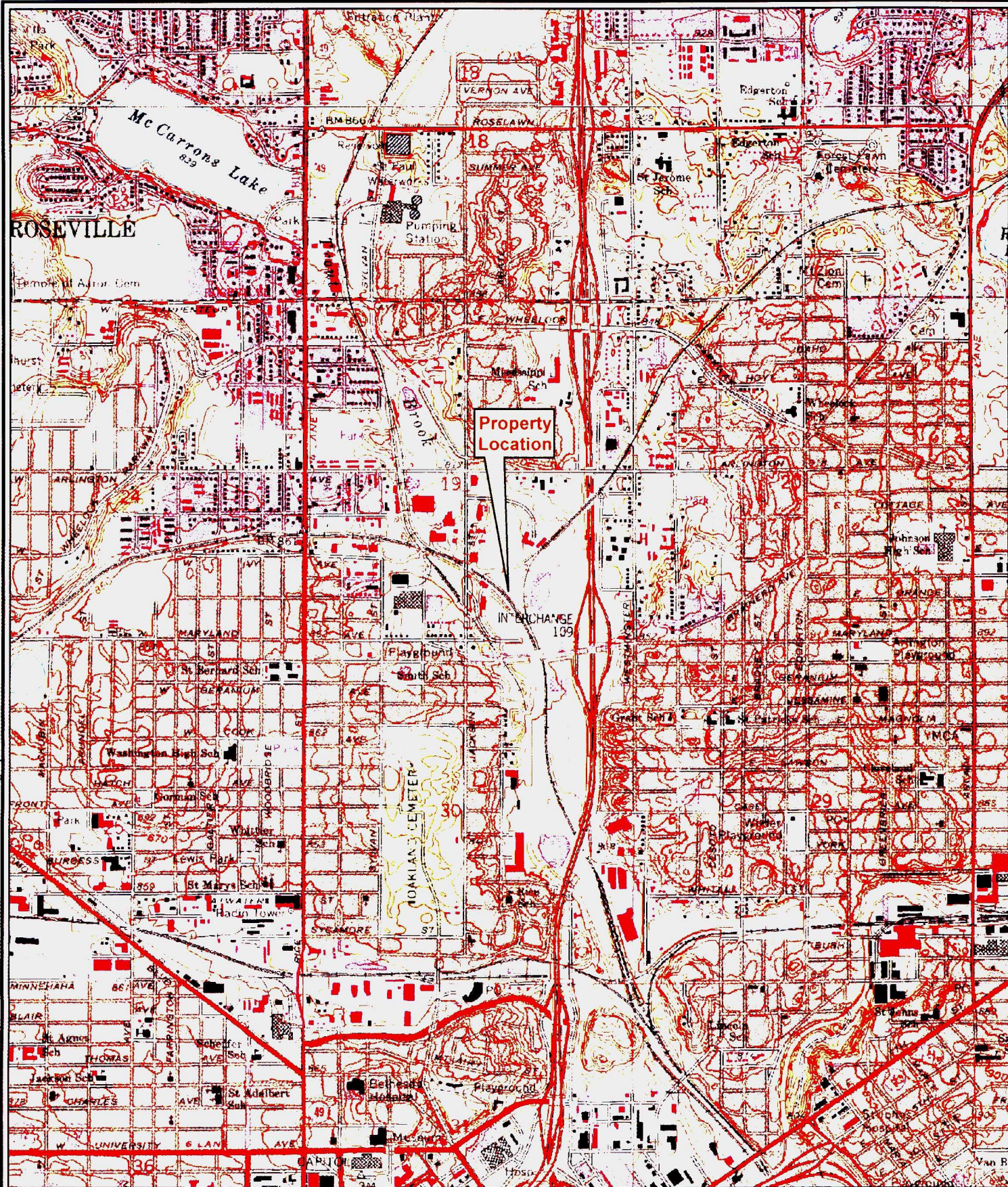
Field activities are planned to commence on or around July 15, 2007. We anticipate that access to the parcels will be pursuant to court order or through voluntary agreement with property owners. Liesch will instruct its staff and all contractors to abide by any conditions for access or testing that are imposed by the court order or through voluntary agreements with property owners. The Phase II work is anticipated to be completed September 1, 2007. We anticipate submittal of a RAP/CCP by September 28, 2007 such that an application to the Department of Employment and Economic Development Cleanup Grant Program can be made by November 1, 2007.

## **5.0 SITE SAFETY PLAN**

A Site Safety Plan (SSP), intended to promote the health and safety of investigation related personnel, is included in **Appendix C**. All Liesch personnel will adhere to the requirements of the SSP during completion of the work outlined in this Work Plan. The selected contractors who will be completing the geoprobing, test trenching and monitoring well installations will be provided a copy of the Liesch Site Safety Plan and will be required to develop their own Health and Safety Plan. As indicated in Section 2.1.3 above, the SSP may need to be updated pending the results of the preliminary investigation of dust and air samples.







Source: USGS 24k Topographic Quad  
Projection: NAD83 UTM Zone 15N

0 1,000 2,000 Feet  
1:24,000 1 inch equals 2,000 Feet



Hydrogeologist Engineers Environmental Scientists

6000 Gisholt Drive, Suite 203  
Madison, WI 53719  
(608) 223-1532

13400 15th Ave. N  
Minneapolis, MN 55441  
(763) 89-3100

4300 N. Miller Rd. Suite 211  
Phoenix, AZ 85251  
(480) 421-0853

Arlington-Jackson West (Parcels 1-19)

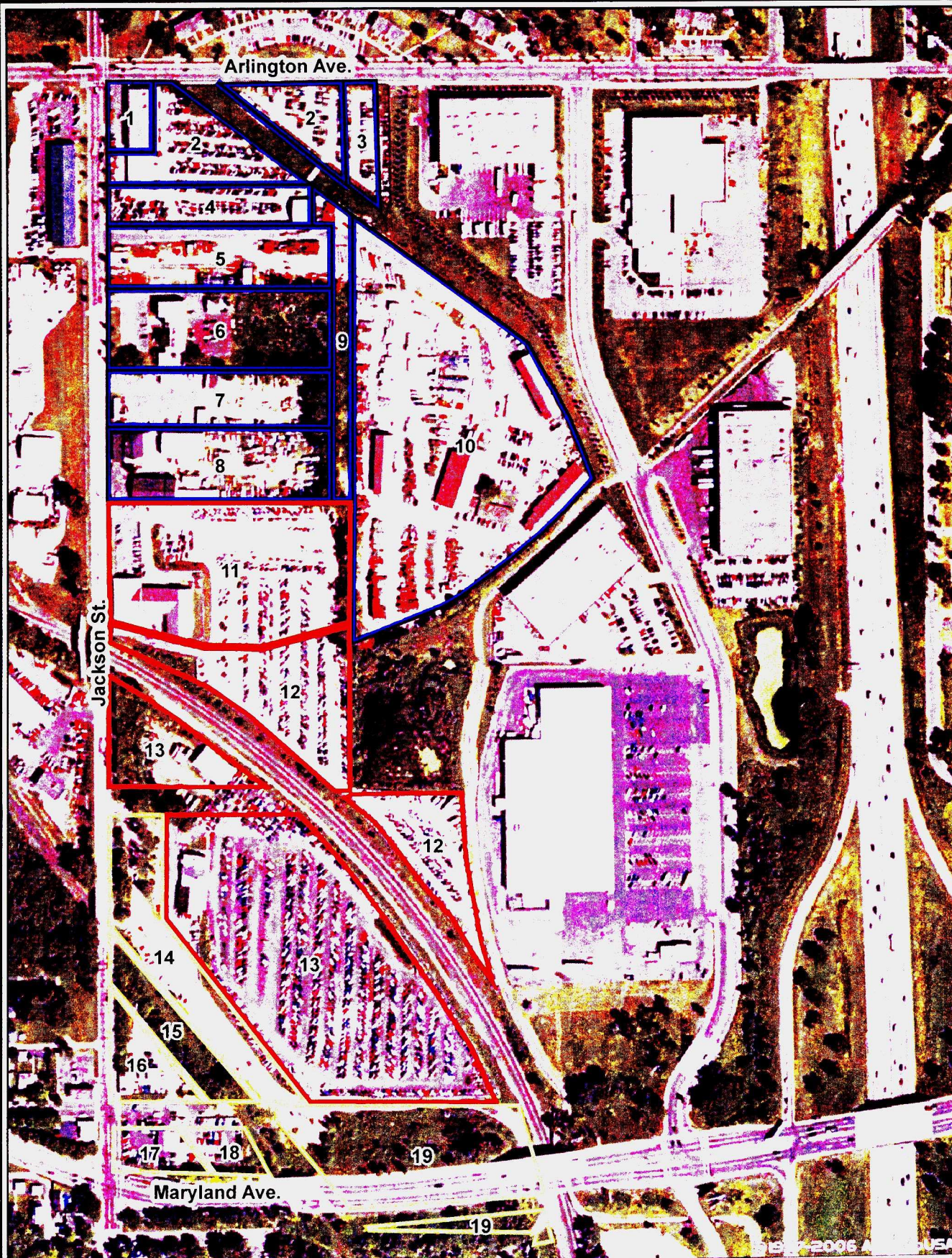
June 07

Property Location

Figure  
1



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Projection: NAD83 HARN Ramsey County (Feet)

**LIESCH** Hydrogeologist Engineers Environmental Scientists  
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4300 N. Miller Rd. Suite 211 Phoenix, AZ 85251 (480)421-0853

Arlington-Jackson West (Parcels 1-19)

June 07

Property Layout

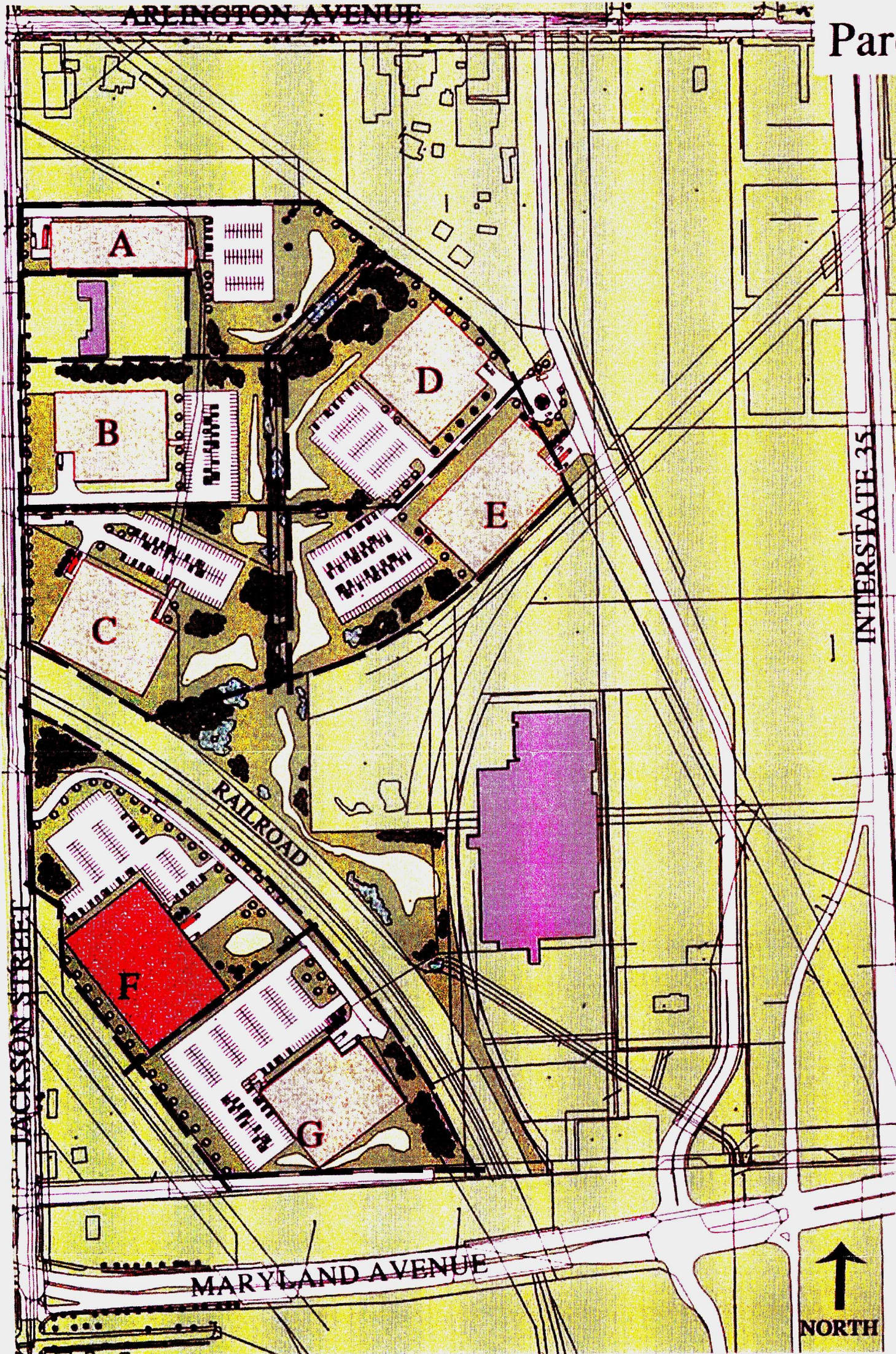
Figure  
2



# ARLINGTON / JACKSON Industrial Redevelopment

## SITE CONCEPT PLAN

### PHASE 2 Parcel Legend



#### *Parcel A*

4 acres  
32,000 bldg sq. ft.  
64 parking spaces

#### *Parcel B*

4.4 acres  
50,000 bldg sq. ft.  
100 parking spaces

#### *Parcel C*

5.8 acres  
50,000 bldg sq. ft.  
100 parking spaces

#### *Parcel D*

4.9 acres  
58,000 bldg sq. ft.  
100 parking spaces

#### *Parcel E*

4.8 acres  
58,000 bldg sq. ft.  
116 parking spaces

#### *Parcel F*

5.9 acres  
70,000 bldg sq. ft.  
140 parking spaces

#### *Parcel G*

5.5 acres  
100,000 bldg sq. ft.  
(2-story)  
200 parking spaces



Prepared for the St. Paul Port Authority  
1900 Landmark Towers, 345 St. Peter Street, St. Paul, Minnesota 55102-1661

0 250 500 Feet  
1:3,200



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(480) 421-0853

Arlington-Jackson West (Parcels 1-19)

June 07

Proposed Redevelopment Layout

Figure  
3

Projection: NAD 83 UTM Zone 15N



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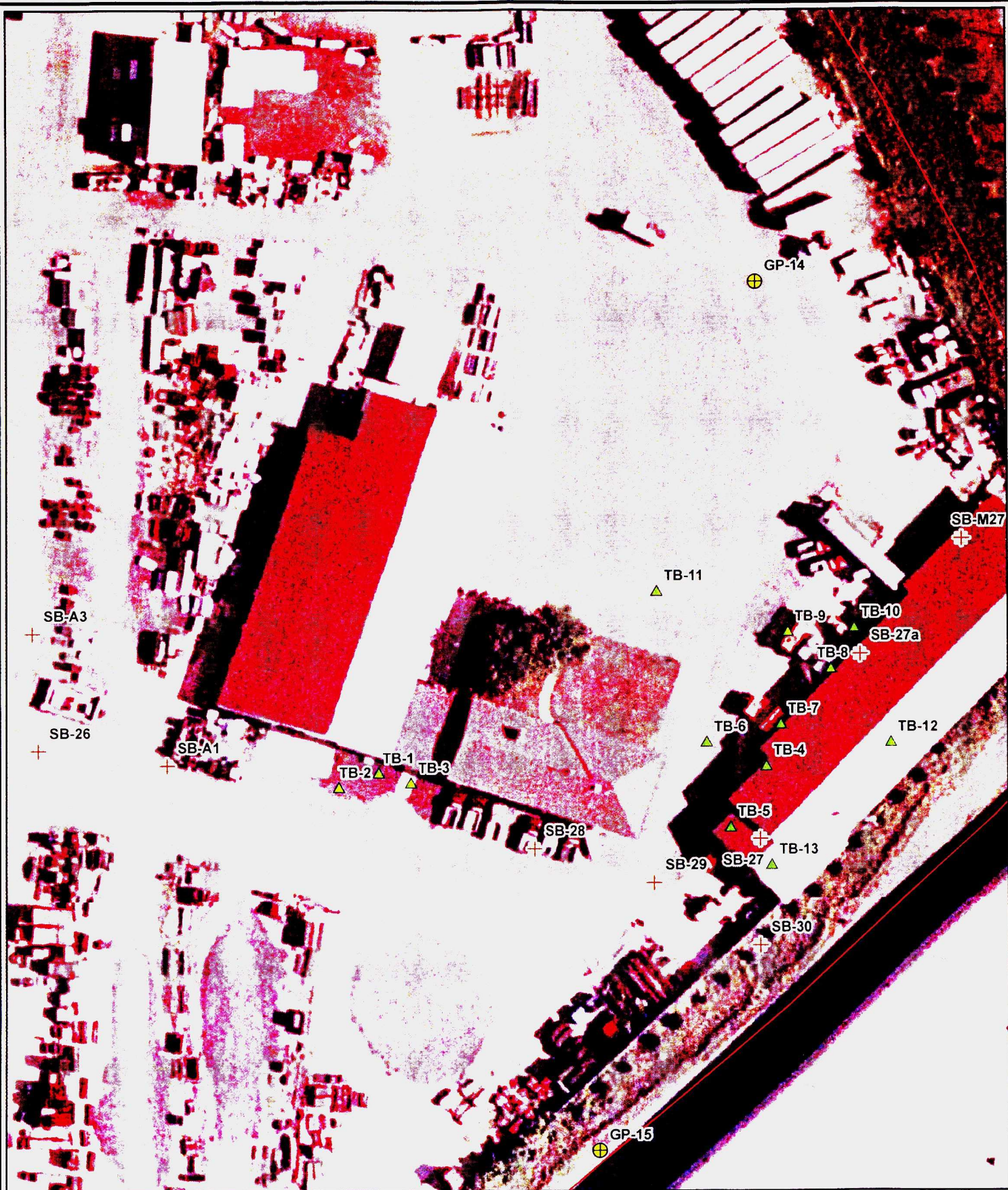


0 200 400 Feet  
1:2,400  
1 Inch equals 200 Feet  
Projection: NAD83 UTM Zone 15N

<b>LIESCH</b> 6000 Gisholt Drive, Suite 203 Madison, WI 53719 (608) 223-1532	Hydrogeologist	Engineers	Environmental Scientists
	13400 15th Ave. N Minneapolis, MN 55441 (763) 489-3100	4300 N. Miller Rd. Suite 211 Phoenix, AZ 85251 (480) 421-0853	

Arlington-Jackson West (Parcels 1-19)	June 07
Former Test Locations	Figure 4





 Geoprobe    
  Soil Boring    
  Test Boring

Projection: NAD83 HARN Ramsey County (Feet)

0 25 50 Feet  
1:720 1 Inch equals 60 Feet



Hydrogeologist   Engineers   Environmental Scientists

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### Arlington-Jackson West (Parcels 1-19)

**June 07**

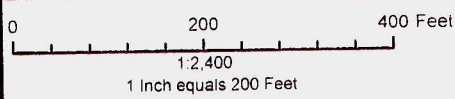
### Former Test Locations (Parcel 10-USTs)

**Figure  
4a**





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Projection: NAD83 UTM Zone 15N

<b>LIESCH</b> Hydrogeologist Engineers Environmental Scientists		
6000 Gisholt Drive, Suite 203 Madison, WI 53719 (608) 223-1532	13400 15th Ave. N Minneapolis, MN 55441 (763) 489-3100	4300 N. Miller Rd. Suite 211 Phoenix, AZ 85251 (480) 421-0853

Arlington-Jackson West (Parcels 1-19)	June 07
Area of Impact	Figure 5



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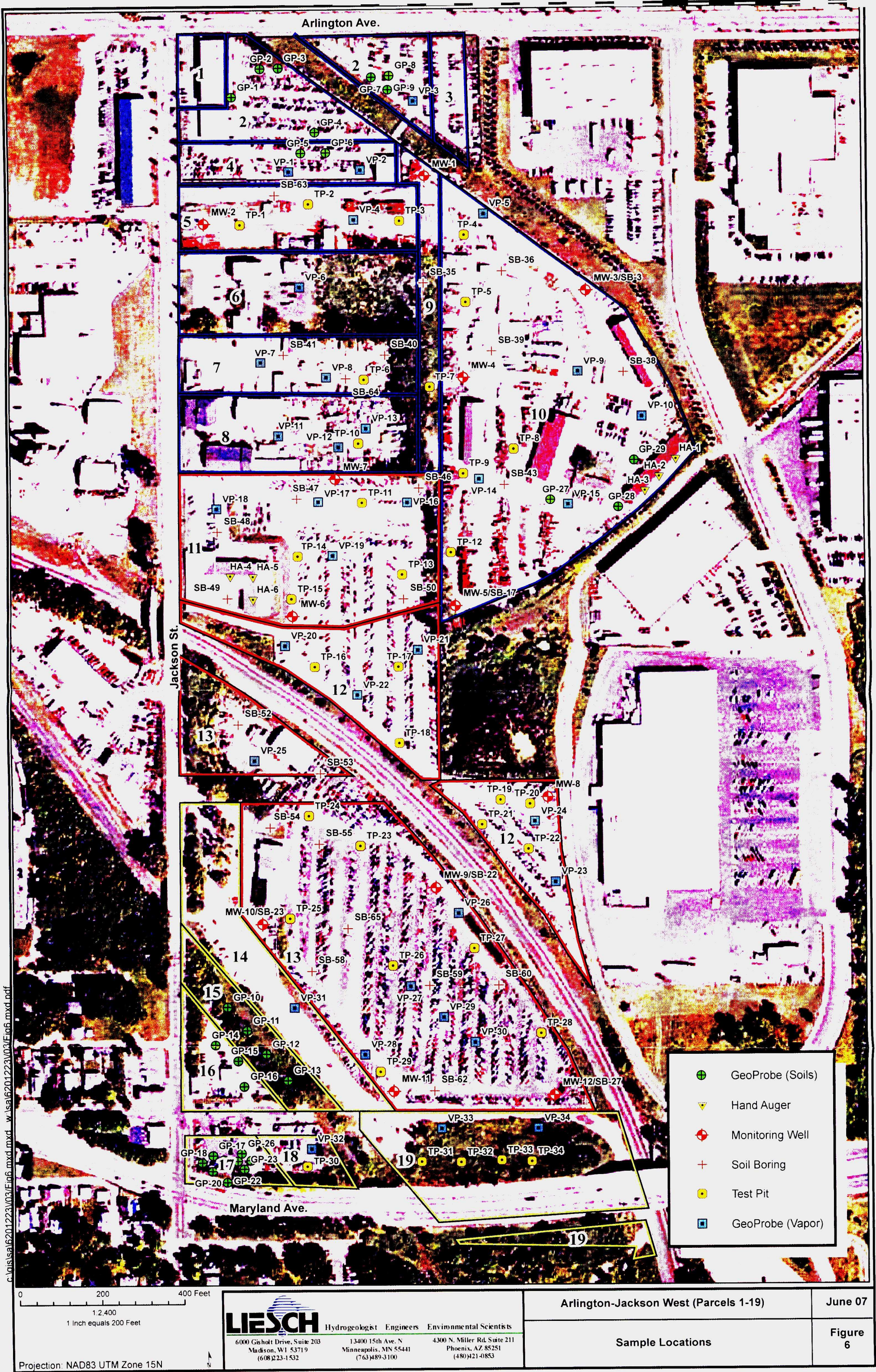






TABLE 1  
PROPOSED SOIL ANALYTICAL PARAMETERS  
Arlington-Jackson West  
Parcels 1-19  
Phase II Investigation Work Plan

TEST LOCATION	DRO	GRO	VOCs	RCRA	PCBs	PAHs	TO-15/METHANE
GP-1	X			X			
GP-2	X	X	X	X	X		
GP-3	X	X	X	X	X		
GP-4	X						
GP-5	X						
GP-6	X						
GP-7	X				X		
GP-8	X				X		
GP-9	X				X		
GP-10	To be determined in field						
GP-11	To be determined in field						
GP-12	To be determined in field						
GP-13	To be determined in field						
GP-14	To be determined in field						
GP-15	To be determined in field						
GP-16	To be determined in field						
GP-17	X	X	X			X	
GP-18	X	X	X			X	
GP-19	X	X	X			X	
GP-20	X	X	X			X	
GP-21	X	X	X			X	
GP-22	X	X	X			X	
GP-23	X	X	X			X	
GP-24	X	X	X			X	
GP-25	X	X	X			X	
GP-26	X	X	X			X	
GP-27	X		X			X	
GP-28	X	X	X	X	X	X	
GP-29	X	X	X	X	X	X	
VP-1							X
VP-2							X
VP-3							X
VP-4							X
VP-5							X
VP-6							X
VP-7							X
VP-8							X
VP-9							X
VP-10							X
VP-11							X
VP-12							X

TABLE 1  
PROPOSED SOIL ANALYTICAL PARAMETERS  
Arlington-Jackson West  
Parcels 1-19  
Phase II Investigation Work Plan

TEST LOCATION	DRO	GRO	VOCs	RCRA	PCBs	PAHs	TO-15/METHANE
VP-13							X
VP-14							X
VP-15							X
VP-16							X
VP-17							X
VP-18							X
VP-19							X
VP-20							X
VP-21							X
VP-22							X
VP-23							X
VP-24							X
VP-25							X
VP-26							X
VP-27							X
VP-28							X
VP-29							X
VP-30							X
VP-31							X
VP-32							X
VP-33							X
VP-34							X
SB-35	X	X	X	X	X	X	
SB-36	X	X	X	X	X	X	
SB-37	To be determined in field						
SB-38	To be determined in field						
SB-39	X	X	X	X	X	X	
SB-40	X	X	X	X	X	X	
SB-41	X		X			X	
SB-42	X	X	X	X	X	X	
SB-43	X	X	X	X	X	X	
SB-44	X		X			X	
SB-45	X	X	X	X	X	X	
SB-46	X	X	X	X	X	X	
SB-47	To be determined in field						
SB-48	X		X			X	
SB-49	X	X	X	X			
SB-50	X	X	X	X	X	X	
SB-51	X	X	X	X	X	X	
SB-52	To be determined in field						
SB-53	To be determined in field						

TABLE 1  
PROPOSED SOIL ANALYTICAL PARAMETERS  
Arlington-Jackson West  
Parcels 1-19  
Phase II Investigation Work Plan

TEST LOCATION	DRO	GRO	VOCs	RCRA	PCBs	PAHs	TO-15/METHANE
SB-54	To be determined in field						
SB-55	To be determined in field						
SB-56	To be determined in field						
SB-57	To be determined in field						
SB-58	To be determined in field						
SB-59	To be determined in field						
SB-60	To be determined in field						
SB-61	To be determined in field						
SB-62	To be determined in field						
SB-63	To be determined in field						
SB-64	X	X	X	X	X	X	
SB-65	To be determined in field						
TP-1	To be determined in field						
TP-2	To be determined in field						
TP-3	X	X	X	X	X	X	
TP-4	X	X	X	X	X	X	
TP-5	X	X	X	X	X	X	
TP-6	X	X	X	X	X	X	
TP-7	X	X	X	X	X	X	
TP-8	X	X	X	X	X	X	
TP-9	X	X	X	X	X	X	
TP-10	X	X	X	X	X	X	
TP-11	X	X	X	X	X	X	
TP-12	X	X	X	X	X	X	
TP-13	X	X	X	X	X	X	
TP-14	X	X	X	X	X	X	
TP-15	X	X	X	X	X	X	
TP-16	To be determined in field						
TP-17	To be determined in field						
TP-18	To be determined in field						
TP-19	X	X	X	X	X	X	
TP-20	X	X	X	X	X	X	
TP-21		X	X				
TP-22	To be determined in field						
TP-23	To be determined in field						
TP-24	To be determined in field						
TP-25	To be determined in field						
TP-26	To be determined in field						
TP-27	To be determined in field						
TP-28	To be determined in field						
TP-29	To be determined in field						



TABLE 1  
 PROPOSED SOIL ANALYTICAL PARAMETERS  
 Arlington-Jackson West  
 Parcels 1-19  
 Phase II Investigation Work Plan

TEST LOCATION	DRO	GRO	VOCs	RCRA	PCBs	PAHs	TO-15/METHANE
TP-30	To be determined in field						
TP-31	To be determined in field						
TP-32	To be determined in field						
TP-33	To be determined in field						
TP-34	To be determined in field						
HA-1	X	X	X	X	X	X	
HA-2	X	X	X	X	X	X	
HA-3	X	X	X	X	X	X	
HA-4	X	X	X	X	X	X	
HA-5	X	X	X	X	X	X	
HA-6	X	X	X	X	X	X	
MW-1	X	X	X	X	X	X	
MW-2	To be determined in field						
MW-3	See SB-3						
MW-4	X	X	X	X	X	X	
MW-5	See SB-17						
MW-6	To be determined in field						
MW-7	To be determined in field						
MW-8	X	X	X	X	X	X	
MW-9	See SB-22						
MW-10	To be determined in field						
MW-11	To be determined in field						
MW-12	To be determined in field						

**Table 2**  
**Arlington-Jackson West**  
**Phase II Work Plan**  
**Soil Sampling Guidelines for Bottles, Volume, Preservative,**  
**Holding Time, and Methodology**

Analyte	Bottle	Volume	Preservative	Holding Time	Analytical Method
DRO	1-2 oz. weighed jar 1 moisture	25-35 grams	None	10 days to preserve 14 days to extract, 40 days to analyze	WI Modified DNR
PAHs	1-4 oz. unweighed jar 1 moisture	60 grams	None	14 days extraction, 40 days to analyze	SW846 8270
PCBs	1-4 oz. unweighed jar 1 moisture	60 grams	None	14 days extraction, 40 days to analyze	SW846 8082
Moisture Content	Plastic Snap-Cap Tube	5 grams	None	--	--
VOCs	1-2 oz. weighed jar w/ methanol 1 moisture (1 methanol trip blank)	25 grams	Prefilled w/ 25 ml methanol	14 Days	SW846 5030/8260
SVOC BNA	1-4 oz. unweighed jar 1 moisture	60 grams	None	14 days extraction, 40 days to analyze	SW846 8270/EPA 625
GRO/PVOCs	1-2 oz. weighed jar w/ methanol 1 moisture (1 methanol trip blank)	25 grams	Prefilled w/ 25 ml methanol	14 Days	WI Modified DNR/SW846 5035/8021
RCRA Metals	1-2 oz. unweighed jar 1 moisture	10 grams	None	180 days for all, except mercury 28 days	SW846 6010B/7420
TCLP RCRA Metals	1-2 oz. unweighed jar 1 moisture	10 grams	None	180 days to extraction, except mercury 28 days	SW846 6010B/7420

**Table 3**  
**Arlington-Jackson West**  
**Phase II Work Plan**  
**Groundwater Sampling Guidelines for Bottles, Volume, Preservative,**  
**Holding Time, and Methodology**

Analyte	Bottle	Volume	Preservative	Holding Time	Analytical Method
DRO	1 Liter Amber bottle	1 full Liter	HCL pH<2.0    Ice	7 days extraction, 40 days to analyze	WI Modified DNR
PAHs	1 Liter Amber bottle	1 full Liter	Ice	7 days extraction, 40 days to analyze	SW846 8270
PCBs	1 Liter Amber bottle	1 full Liter	Ice	7 days extraction, 40 days to analyze	SW846 8082
VOCs	3-40 mL vials	3-40 mL vials	HCL pH<2.0    Ice	14 Days	SW846 8260/EPA 624
SVOC BNA	1 Liter Amber bottle	1 full Liter	Ice	7 days extraction, 40 days to analyze	SW846 8270/EPA 625
GRO/PVOCs	3-40 mL vials	3-40 mL vials	HCL pH<2.0    Ice	14 Days	WI Modified DNR/SW846/8021
RCRA Metals (dissolved)	1-500 mL plastic bottle	500 mL	HNO <sub>3</sub> pH<2.0 Ice	180 days for all, except mercury 28 days	SW846 6010B/7420 7470A



**Table 4**  
**Arlington-Jackson West**  
**Phase II Work Plan**  
**Field Quality Control Requirements**

QC Sample	Frequency	Acceptance Criteria	Corrective Action
Field sample duplicate	1 per 20 samples	+/- 35% of replicate	(1) Require laboratory to re-analyze samples, if applicable. (2) Resample all locations that contained contaminants above laboratory MDLs if required to meet project objectives.
Equipment blank	1 set per sampling day per each sampling crew	Less than 2% greater than laboratory MDL	(1) Require laboratory to re-analyze samples, if applicable. (2) Assess impact to objective of investigation and resample 35% of original samples if required to meet project objectives. (3) Resample all locations that contained contaminants above laboratory MDLs if required to meet project objectives.
VOA trip bank	1 per cooler	Less than 2% greater than laboratory MDL	(1) Require laboratory to re-analyze samples, if applicable. (2) Resample all locations that contained contaminants above laboratory MDLs if required to meet project objectives.
Methanol blank	1 per 20 samples	Less than 2% greater than laboratory MDL	(1) Require laboratory to re-analyze samples, if applicable. (2) Assess impact to objective of investigation and resample 35% of original samples if required to meet project objectives. (3) Resample all locations that contained contaminants above laboratory MDLs if required to meet project objectives.
Temperature blank	1 per cooler	4 degrees C or less	Resample all locations if required to meet project objectives.

**SITE SAFETY PLAN (STANDARD FORM)  
FOR LIESCH STAFF**

**A. SITE INFORMATION**

Project Manager: Eric Hesse

Site Safety Officer To Be Determined

Plan Prepared By: Eric Hesse

Project Name: SPPA – Arlington-Jackson West Ph. II Work Plan Date: 6/07/07

Project No: 6201223.03 Project: SA

Project Address (attach location map): Area east of Jackson, south of Arlington, north of Maryland and west of I-35E (the Site)

Client Name, Contact, and Telephone Number:

St. Paul Port Authority, Monte Hilleman, (651) 224-5686

Utility Clearance Responsibility: Drilling Subcontractor – To Be Determined

Utility Clearance Completed: ☐ Yes ☒ No ☐ Unknown Date to be Completed: A public utility meeting will be scheduled prior to beginning work. A private locate will be scheduled by the subcontractor simultaneously with the public utility meeting.

Scope of Project or Work Plan (title/date) With Brief Scope of Work Description:

A Phase Two Investigation consisting of observation and direction of 35 test pits, 60 geoprobes, 28 soil borings, 12 monitoring wells, 6 hand auger borings and building demolition surveys on the Site. Previous investigations identified soil and groundwater contamination. Contaminants of concern include Diesel Range Organics, Gasoline Range Organics, RCRA metals, Polynuclear Aromatic Hydrocarbons (PAHs), Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs) and buried debris. Asbestos Containing Materials (ACM) and lead containing materials may also be present within the existing on-site structures. Liesch will collect and screen soil samples for organic vapor headspace analysis and collect soils samples for laboratory analysis; collect groundwater samples for analysis; collect subsurface vapor samples for analysis, and collect samples of suspect ACM and lead per homogenous areas for analysis to characterize hazardous materials requiring abatement prior to demolition located at the Site.

Proposed Date(s) of Investigation: July 15 – September 1, 2007

Has a release been discovered: ☒ Yes ☐ No

If Yes, Nature of Release or Potential Release: Previous soil borings reported the presence of buried

debris, subsurface methane, lead and petroleum contamination in the soil and groundwater at the site.

Action Levels: ☒ Level D to Level C Photoionization detector (PID) organic vapor measurements in breathing zone 10-25 parts per million (ppm) over 10-minute periods; Drilling in areas where potential asbestos contaminated soils are present.

☒ Level C to Level B 25 ppm or greater for 10 minutes in breathing zone. If level B conditions are encountered, Liesch will discontinue field activities until source is controlled.

## B. SITE CHARACTERISTICS:

See attached table(s) which identify contaminants expected or identified, primary health concerns, route of exposure, permissible exposure limits (PEL), and ionization potential.

### CHEMICAL HAZARDS

Waste Type(s): Liquid ☒ Solid ☒ Sludge ☒ Gas ☒  
Vapor ☒ Particulate ☒ None-Known ☐

Notes: \_\_\_\_\_

Characteristics: Corrosive ☐ Ignitable ☐ Combustible ☒  
Reactive ☐ Volatile ☒ Radioactive ☐  
Toxic ☐ Carcinogenic ☒ Irritating ☐  
Sensitizing ☐ Mutagenic ☐ Neurotoxic ☐  
Other (name) ☐ Unknown ☐

Notes: \_\_\_\_\_

### PHYSICAL/BIOLOGICAL HAZARDS

Type(s): Terrain ☒ Water ☐ Mechanical Equipment ☒  
Elevated Work ☐ Utilities ☒ Excavations ☒  
Fire/Explosion ☐ Falling Objects ☐ Microbiological ☐  
Heat Stress ☒ Cold Stress ☐ Other ☐

Notes: \_\_\_\_\_

## C. MEDICAL SURVEILLANCE AND TRAINING

Special Medical or Training Requirements: Site personnel will be current with routine Liesch medical monitoring and initial HAZWOPER 40-hour training and subsequent annual 8-hour HAZWOPER refresher training.



D. PROTECTIVE EQUIPMENT:

1. Personal Protection: Level C ☐ Level D ☒

PPE Selection Criteria: Based upon work completed on similar projects, if asbestos is an issue in soils, some of the work will have to be done in level C..

Modifications In PPE: None

Clothing Material: Hard hat, hard-soled footwear, vinyl/polyethylene gloves, hearing and eye protection, coveralls, safety vest

Special Equipment (Harnesses, Shoring, Life Vest, Safety Nets):

APR Cartridges/Filters: N/A

Other: N/A

2. Protective Equipment "On Stand-By":

Should site conditions change (requiring an upgrade in PPE based on action levels in Section F) personal protection available on-site:

Level C ☐ Modified Level D ☒\* Due to potential inhalation of organic vapors.

\*If modified level D is checked, description of anticipated contaminants must be provided justifying the upgrade.

PPE Selection Criteria: Potential inhalation of organic vapors and dust from potentially contaminated soils; Organic vapors >10 ppm over 10 minutes or dust condition that limits visibility to less than 10 feet.

Modifications In PPE: None

Clothing Material: Same as above in addition to Tyvek suit and respirator.

APR Cartridges/Filters: Organic vapor cartridges and/or HEPA cartridges for the dust.

Other: None

E. AIR MONITORING

Equipment used: PID	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Every <u>1</u> Hour
Drager Tube (type _____)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Every _____ Hour
FID	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Every _____ Hour
CO	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Every _____ Hour
LEL/O2	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Every _____ Hour
Other	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Every _____ Hour

At the completion of the field work a copy of the air monitoring data must be turned into the H&S Officer (Mark Miller).

F. SITE INFORMATION

Map/sketch attached: ☒ Yes ☐ No  
Zone(s) of contamination identified: ☐ Yes ☐ No  
Perimeter Identified: ☒ Yes ☐ No  
Site Secured: ☐ Yes ☒ No

Site Control: Liesch representative will inform non-investigation related personnel to leave the Site.

Site Entry Procedures: None

Work Partners: To Be Determined

Work Limitations (Time Of Day, Hours Between Required Breaks, Physiological Monitoring, Etc.) Daylight hours

Investigation-Derived Material Disposal: Investigation derived material will be thin spread at the site or placed back in test pit.

(Disposable protective equipment, etc.): Liesch dumpster

G. EMERGENCY PROCEDURES:

Location of Nearest Working Telephone: Liesch cell phone

Location of Fire Extinguishers: Liesch vehicle, subcontractor vehicles

Location of Emergency Showers/Eye Lavages: Liesch field kit

Location of First Aid Kit: Liesch vehicle

EMERGENCY INFORMATION:

Liesch Internal Communication Procedures (order of emergency contacts and responsibilities):

1. Eric Hesse, Project Manager, Office: (763) 489-3136, Cell: (612) 718-8879
2. Mark Miller, Company Safety Officer, Office: (763) 489-3125, Cell: (612) 209-3852
3. Ken Olson, Company Safety Office, Office (763) 489-3130, Cell: (612) 554-4736

Fire 911

Police: 911

Hospital: Regions Hospital, (651) 254-3456 or 911

Poison Control Center: (612) 347-3141

Power Company: Xcel Energy (800) 895-1999

Natural Gas Company: CenterPoint Energy (612) 372-5050

Telephone Company: Qwest (800) 954-1211

EMERGENCY ROUTES (Give address, road or other directions and/or attach a map show



route to hospital): Regions Hospital, 640 Jackson Street, St. Paul , MN 55101; From Site:  
Head south on I-35E; turn right on Jackson Street. (See attached map)

H. ADDENDUM TO SITE SAFETY PLAN

Use this page to add additional site data or describe any special circumstances that have become apparent after the original preparation of this Site Safety Plan. Include any changes in site conditions, PPE and monitoring modifications and other items as appropriate.

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CORPORATE SAFETY OFFICER:

Plan Approved By: Mark Miller  
(Name) (Signature) (Date)

PRINCIPAL SIGN-OFF:

Plan Approved By: Kenneth P. Olson  
(Name) (Signature) (Date)

Revision: \_\_\_\_\_  
\_\_\_\_\_

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\*NOTE: Team members shall initial next to their names to acknowledge that they have been informed of the Site Safety Plan requirements and hazards involved with working at the site.

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5000 Gisholt Drive, Suite 203  
Madison, WI 53713  
(608) 223-1532

13400 15<sup>th</sup> Avenue North  
Minneapolis, MN 55441  
(763) 559-1423

4300 N. Miller Road, Suite 211  
Scottsdale, AZ 85251  
(480) 421-0853

# AIR MONITORING DATA SHEET

MONITORING BY:		DATE:		INSTRUMENT #:			
PROJECT #:		APR CARTRIDGE:					
PROJECT NAME:		APR ON AT:					
SITE/LOCATION:		APR OFF AT:					
WEATHER CONDITIONS:		TOTAL HOURS APR:					
FIELD ACTIVITIES:							
CALIBRATION:							

[illegible]



**Sorry!** When printing directly from the browser your map may be incorrectly cropped. To print the entire map, try clicking the **"Printer-Friendly"** link at the top of your results page.



**START** **Advance Equipment Co:**  
651-489-8881  
1400 Jackson St, St Paul, MN 55117,  
US

**END** **Regions Hospital:** 651-221-3456  
640 Jackson St # 3, St Paul, MN  
55101, US

**Total Est. Time:**  
6 minutes

**Total Est. Distance:**  
2.54 miles

### Maneuvers

### Distance



**1:** Start out going SOUTH on JACKSON ST / CR-55 toward NORPAC RD.

0.5 miles



**2:** Turn LEFT onto MARYLAND AVE E / CR-31 E.

0.3 miles



**3:** Merge onto I-35E S / US-10 E.

1.1 miles



**4:** Take the UNIVERSITY AVE exit- EXIT 107C- toward STATE CAPITOL.

0.1 miles



**5:** Turn RIGHT onto UNIVERSITY AVE E.

0.3 miles



**6:** Turn LEFT onto JACKSON ST / CR-55 S.

<0.1 miles



**7:** Turn LEFT.

<0.1 miles



**8:** End at **Regions Hospital:**  
640 Jackson St # 3, St Paul, MN 55101, US

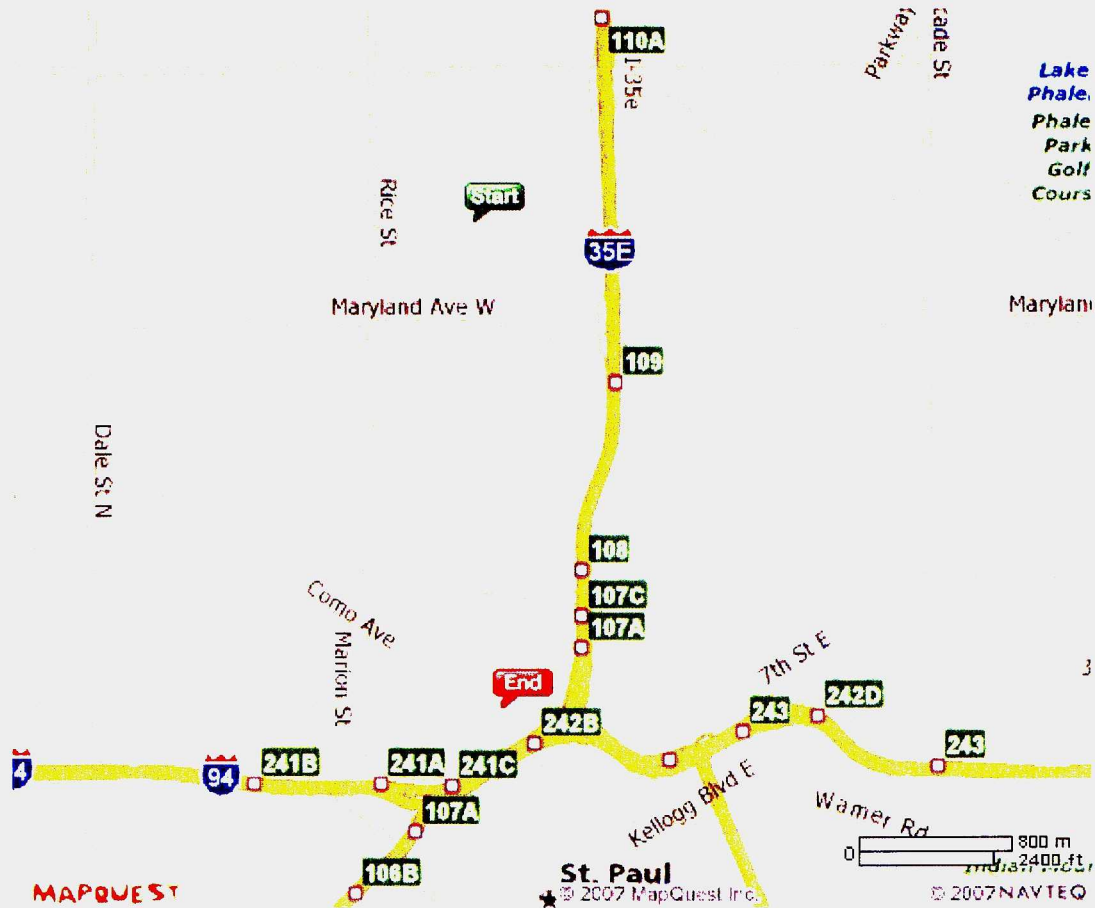
**Total Est. Time:** 6 minutes

**Total Est. Distance:** 2.54 miles





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